

SECTION 4. COMPUTER-BASED RECORDKEEPING

1827. GENERAL. Many operators are developing computer-based recordkeeping systems, allowing more flexible and efficient maintenance of records. Some computer-based systems offer electronic communications capabilities which benefit both the operator and the FAA. This section contains information and guidance to be used by principal operations inspectors (POI's) when evaluating and approving an operator's computer-based record-keeping system.

1829. REGULATORY REQUIREMENTS. Parts 121 and 135 require that operators maintain certain records on crewmembers and aircraft dispatchers. FAR 121.683(c) requires that computer-based recordkeeping systems be approved by the FAA. FAR 135.63 neither specifies the method by which Part 135 operator records are kept nor requires approval of computer-based record systems for Part 135 operators.

1831. GUIDELINES FOR SYSTEM APPROVAL. POI's shall ensure that operators follow certain guidelines and submit certain information when applying for approval of a computer-based recordkeeping system.

A. Approval and Evaluation Process. A Part 121 operator may apply for approval of a computer-based recordkeeping system that is designed to satisfy either all regulatory requirements or specific regulatory requirements, such as training records. When evaluating a computer-based recordkeeping system, POI's shall ensure that the proposed system provides a means of maintaining accurate, timely, and reliable records required by the FAR's. When approving the system, POI's shall follow the general 5-step approval process described in volume 1, chapter 4, section 6 of this handbook.

(1) *Application by Letter.* Part 121 operators must apply for approval of computer-based recordkeeping systems by letter.

(a) *Content of Letter.* The letter of application must contain the following information:

- A general description of the proposed computer-based recordkeeping system

(including the facilities, hardware and software to be utilized)

- The data backup system to be used
- Access and security procedures for both the operator and FAA personnel
- Basic procedures for data-entry personnel
- A general description of any special procedures and capabilities

(b) *Categories of Records.* The letter of application must include one or more of the following categories of records which will be maintained by the computer-based recordkeeping system:

- Airman training records (including pilot, flight engineer, flight navigator, flight attendant, flight instructor, check airman, and aircraft dispatcher training records)
- Aircraft qualification records (including aircraft type ratings, proficiency checks, competency checks, and line checks)
- Flight time limitation and rest requirement records
- Medical qualification records (when applicable)
- Route, "special airport," and area qualification records
- Operating experience (OE) and/or operating familiarization records
- Pilot recency of experience records

- Check airman, aircrew program designee (APD), and school designated examiner (SDE) designations or authorizations
- Special training or testing requirements
- Aircraft listings
- Load manifests, dispatch/flight releases
- Communication records

(2) *Parallel Recordkeeping System.* The POI shall ensure that any operator that requests approval of a computer-based recordkeeping system retains data-entry forms or other pertinent non-electronic records in a parallel record system. The POI shall ensure that all required records continue to be maintained while the computer-based recordkeeping system is being installed, tested, and evaluated, and data-entry personnel are being trained to recognize regulatory terminology and requirements.

B. *System Evaluation.* POI's shall evaluate the computer-based recordkeeping system capabilities and level of security.

(1) *System Capabilities.* Prior to approval, the POI should carefully evaluate the proposed computer-based recordkeeping system to ensure that the system is capable of providing accurate, timely, and reliable records, as required by the FAR's. The POI shall review the operator's proposed transition plan and user manual, and observe operation of the operator's existing recordkeeping system in parallel operation with the proposed computer-based system. The extent of this evaluation depends on the complexity of the proposed system and its intended use. The evaluation of a system designed to comply with all regulatory requirements will be much more complex than that of a system designed to maintain records in one specific category. The POI shall ensure that system security, record retention periods, and data backups are adequate. Potential problem areas should be identified and corrected prior to approval.

(2) *Level of Security.* POI's shall evaluate the proposed system's level of security to ensure that the data base is adequately protected.

(a) *Authorized Access.* To maintain integrity of the data base and associated records, the POI should coordinate with the operator during the approval process concerning which FAA personnel will have access to the operator's recordkeeping system. One frequently used approach is to rely on controlled user access codes and passwords.

(b) *Monitoring User Access.* A representative designated by the operator should actively monitor user access and periodically review access control requirements. This representative shall be specifically identified and authorized in the operator's proposal and user manual.

(c) *Electronic Signature.* The operator should establish a procedure for allowing designated personnel such as flight instructors/check airmen, aircraft dispatcher supervisors, and flight attendant supervisors to electronically certify all record entries for which they are responsible. This certification may take one of many forms such as full name, initials, or unique identification number. Each designated person with authorization to make such entries shall be issued a unique individual access code and password in order to validate the entry. The operator may devise a system that requires the validating official to either enter a real-time record into the system or complete a written transmittal document to be given to data-entry personnel. If a written transmittal document is used, the identification of the validating official must become part of the record.

(d) *Unrestricted Data Retrieval.* Appropriate FAA personnel assigned to the operator should be provided with an access level which allows unrestricted data retrieval of all records required by the FAR's. If the operator elects to use the computer recordkeeping system's capability for electronic designation of APD's and check airmen, an appropriate level of access should be provided to the POI or a designated representative to allow necessary data entries.

(3) *Data Backup Capability and Storage.* The POI shall verify that the operator has established a backup capability to generate a complete set of duplicate records, either electronic or non-electronic. These records should be stored in a location separate from the main information storage facility. These records may be stored in any form acceptable to the POI, including magnetic tape, magnetic or optical disk, microfiche, or printed records. The operator shall backup data as frequently as appropriate to the operator's level of operations and system complexity. For

example, a major operator may perform a simultaneous on-line data backup, while a smaller operator may perform backups at less frequent intervals.

(4) *User Manual.* The operator shall develop a working procedures manual for day-to-day guidance and training for the operator's employees. This manual should also be provided as a reference document for FAA users. This manual will not require FAA approval but must include guidance in the automated recordkeeping system structure and instructions for using computer commands for such operations as data entry, data processing, data retrieval, and report generation. This manual should address system security procedures and responsibilities, including identification of personnel charged with various levels of data entry, data verification and correction, data audits, and quality control. It should also identify individuals with the authority to issue user-access codes and passwords.

(5) *Audit Procedures.* The POI shall ensure that operators' programs contain audit procedures that are adequate to assure the accuracy of the data base. The frequency and scope of these procedures should reflect the complexity of the computer-based recordkeeping system and the size of the data base.

1833. GRANTING APPROVAL. When all requirements of paragraphs 1831.B.(1) through 1831.B.(5) have been met, the POI may either grant approval for the entire computer-based recordkeeping system or any part of the system. This approval shall be a nonstandard paragraph in the operations specifications (OpSpecs) and shall directly reference the manual where the information in the recordkeeping system is maintained.

1835. SYSTEM SURVEILLANCE. POI's are responsible for conducting system surveillance which includes periodic inspections and audits, inspection intervals, and data-entry accuracy.

A. *Inspections and Audits.* After the computer-based recordkeeping system is approved and fully operational, the POI shall ensure compliance through periodic inspections and audits. These inspections and audits shall be conducted using the same criteria as those used during the initial approval process. The POI should plan inspection intervals at least once every 12 months. The annual inspection should normally be conducted in conjunction

with national program guidelines.

B. *Inspection Intervals.* When determining inspection intervals, the POI shall consider the following:

- The size of the data base
- The system's overall sophistication level
- The extent of the system's security measures
- The capability and frequency of the system's self-audit function

C. *Scope of the Inspection.* The POI shall determine the scope of the inspection. It may be appropriate to sample a small number of records in each category that the system is approved to maintain, or to conduct an indepth inspection of a specific category of records, such as aircraft dispatcher training.

D. *Data-Entry Accuracy.* The POI shall ensure data-entry accuracy during all inspections and audits. A useful evaluation tool might be to compare the operator's required records with FAA surveillance, inspection, and certification records.

1837. ADDITIONAL SYSTEM CAPABILITIES. In addition to record retention and retrieval, the operator may request approval of a system with additional capabilities such as electronic communications and surveillance.

A. *Electronic Communications.* The operator may provide the POI with electronic mail capability which would allow the operator to request designation of certain airmen, such as check airmen, APD's, and SDE's. This capability would also allow the POI to respond electronically to these requests, thereby increasing both operator and FAA efficiency and convenience. To implement this electronic mail capability, the operator should provide the POI with system access from the POI's facility by providing necessary hardware to be installed at the POI's facility.

B. *Electronic Surveillance.* The operator may also provide direct access to the operator's computer-based recordkeeping system to allow the POI to carry out required surveillance activities such as random record retrieval for spot inspections, data audits, selective data retrievals, and reports or summaries. The operator should limit system

access to those portions of the recordkeeping system that are used for data retrieval of records required by the FAR's. Normally, the POI should not be given access to data-entry areas; however, the operator may authorize the POI access to data-entry areas which pertain to FAA-

specific data, such as observations of the pilot-in-command (PIC) OE and observation events related to the designation of check airmen or APD candidates.

1838. - 1850. RESERVED.

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